

# **Module 4: Disaster Medical Operations**

## **Lesson 15: Patient Assessment and Treatment**

### **Self-Study Guide**

## Lesson Overview

<b>Overview</b>	This lesson explains how to do a patient assessment and provide basic treatment for common injuries.
<b>Lesson Objectives</b>	<p>After completing this lesson, you should be able to:</p> <ul style="list-style-type: none"><li>▪ Explain the procedures for head-to-toe patient assessment.</li><li>▪ Describe basic care for common injuries.</li></ul>
<b>Estimated Time</b>	55 minutes
<b>Contents</b>	<p>This lesson includes the following sections:</p> <ul style="list-style-type: none"><li>▪ Lesson Overview</li><li>▪ Head-to-Toe Assessment</li><li>▪ Treating Common Injuries</li><li>▪ Lesson Summary</li></ul>

### Lesson Overview

In previous lessons, you learned about triage and rapid treatment for life-threatening conditions. Many victims will have less critical injuries requiring basic care.

Common injuries that may require initial treatment by CERT members during a disaster include:

- Burns.
- Wounds.
- Fractures, sprains, and strains.
- Hypothermia.

Although CERTS cannot treat spinal injuries, they can take precautions if spinal injuries are suspected.

In this lesson you will learn to conduct a head-to-toe assessment to determine the type and extent of injury.

You will also learn about basic treatments that a CERT member can administer to injured victims. In classroom training, you will learn more about the points covered in this lesson.

### What Is a Head-to-Toe Assessment

After all victims in an area have been through triage, head-to-toe victim assessments begin.

The objectives of a head-to-toe assessment are to:

- Determine, as clearly as possible, the extent of injuries.
- Determine what type of treatment is needed.
- Document injuries.

All victims should be assessed—even those who seem unhurt.

### What Are You Looking For?

During an assessment, look for indicators that will help you determine the nature of the person's injury. Indicators may include:

- Bruising.
- Swelling.
- Pain.

You should also try to find out how a person has been hurt (called the "mechanism of injury") because it may point to probable injuries.

### Talk to the Victim!

With a conscious victim, assessment should be both hands-on and verbal. There are several important reasons to talk to the victim during assessment:

- **To ask permission.** You should always ask permission to conduct the assessment. The victim has the right to refuse your help.
- **To calm the person.** Telling the person who you are and what you are doing helps reduce anxiety.
- **To obtain information.** Ask the person to describe his or her symptoms and to tell you how the injury occurred.

### Assessment Guidelines

When conducting a head-to-toe assessment:

- **Be alert.** Pay careful attention, using all of your senses. Look, listen, and feel for anything unusual.
- **Be thorough.** Perform an entire assessment before beginning any treatment.
- **Be cautious.** Treat all unconscious victims as if they have a spinal injury. (You'll learn more about the signs of spinal injuries later in this lesson.)
- **Be consistent.** Conduct assessments systematically, the same way every time.

### Assessment Sequence

Conduct the assessment from top to bottom, in the order shown below. Check each body part for injuries to bones and soft tissue. Be sure to look at your hands after checking every part for evidence of patient bleeding.

Knowledge Review



**Instructions: Select the correct answers. When you are finished, turn to the next page to check your answers.**

1. A victim should be thoroughly assessed:

- ☐ As soon as that victim has been triaged.
- ☐ After all victims in the area have been triaged for the three "killers."
- ☐ Immediately after being rescued or located.
- ☐ During triage.

2. Should the following tasks be part of a head-to-toe assessment of a conscious victim? Select Yes or No for each task.

	Yes	No
Ask permission to conduct an assessment.	<input type="checkbox"/>	<input type="checkbox"/>
Explain what you are doing.	<input type="checkbox"/>	<input type="checkbox"/>
Assess the type and extent of injuries.	<input type="checkbox"/>	<input type="checkbox"/>
Identify the mechanism of injury.	<input type="checkbox"/>	<input type="checkbox"/>
Determine what kind of treatment is needed.	<input type="checkbox"/>	<input type="checkbox"/>
Provide treatment for identified injuries as you find them.	<input type="checkbox"/>	<input type="checkbox"/>
Document injuries.	<input type="checkbox"/>	<input type="checkbox"/>

3. A patient assessment should be conducted in the same sequence every time. Insert the correct numbers in the boxes to complete the order of assessment.

- Arms
- Abdomen
- Back
- Chest
- Head
- Legs
- Neck
- Pelvis
- Shoulders

Knowledge Review: Answer Key



**Instructions: Compare your answer to those shown below.**

1. A victim should be thoroughly assessed:

- ☐ As soon as that victim has been triaged.
- ☒ **After all victims in the area have been triaged for the three "killers."**
- ☐ Immediately after being rescued or located.
- ☐ During triage.

A victim should be thoroughly assessed after all victims in the area have been triaged. All victims should be assessed, even those who appear to be unhurt.

2. Should the following tasks be part of a head-to-toe assessment of a conscious victim? Select Yes or No for each task.

	Yes	No
Ask permission to conduct an assessment.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Explain what you are doing.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Assess the type and extent of injuries.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Identify the mechanism of injury.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Determine what kind of treatment is needed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provide treatment for identified injuries as you find them.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Document injuries.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Life-threatening conditions should have been identified during triage and treated before conducting the head-to-toe assessment. During an assessment you will be looking for any indicators of possible injury, such as swelling, pain, disfigurement, or bleeding. The entire assessment should be completed before beginning treatment.

**Knowledge Review: Answer Key (Continued)**

3. A patient assessment should be conducted in the same sequence every time. Insert the correct numbers in the boxes to complete the order of assessment.

- Arms
- Abdomen
- Back
- Chest
- Head
- Legs
- Neck
- Pelvis
- Shoulders



### Basic Care for Common Injuries

During patient assessment, you may identify a wide variety of injuries. In the remainder of this lesson, you will learn about basic treatments for:

- Burns.
- Wounds.
- Fractures, sprains, and strains.
- Hypothermia.

This information will help you become familiar with the injuries and recommended treatments. **Remember, don't try to apply these treatments until you have had classroom training!**

### Identifying Neck, Spine, and Head Injuries

A neck, spine, or closed-head injury is an extremely serious injury. This type of injury must be identified immediately so that important precautions can be taken.

### Signs of a Neck, Spine, or Closed-Head Injury

A victim who exhibits any of the following signs should be treated as having a neck, spine, or closed-head injury:

- Change in consciousness
- Inability to move one or more body parts
- Severe pain or pressure in the head, neck, or back
- Tingling or numbness in extremities
- Difficulty breathing or seeing
- Heavy bleeding, bruising, or deformity of the head or spine
- Blood or fluid in the nose or ears
- Bruising behind the ear
- "Raccoon" eyes (bruising around eyes)
- "Uneven" pupils
- Seizures
- Nausea or vomiting
- Mechanism of injury that could cause this type of injury (e.g., when a victim is found under collapsed building material)

### Handling Neck, Spine, and Head Injuries

Your main objective with suspected injuries to the head, neck, or spine is to do no harm. To avoid further injury:

- Keep the head, neck, and spine in a straight line during the assessment and while treating other life-threatening injuries.
- Don't move the victim until you have done a head-to-toe assessment unless you and the victim are in immediate danger.

### Materials for In-Line Stabilization

In-line stabilization is done to keep the head, neck, and spine in a straight line. Ideally, a backboard and cervical collar are used for this purpose.

In an emergency, standard equipment may not be available, and you may need to be creative. For example:

- A door, desktop, or building materials could be used as a backboard if moving the victim is necessary.
- Towels, draperies, or sandbags could be used to stabilize the head on the board.

## Knowledge Review



**Instructions: Select the correct answers. When you are finished, turn to the next page to check your answers.**

1. The main objective with a suspected closed-head, neck, or spinal injury is to:
  - ☐ Prevent further injury by keeping the spine in a straight line.
  - ☐ Determine the extent of the injury.
  - ☐ Move the victim as quickly as possible to a treatment area.
2. Read the victim descriptions below. Based on the information given, should a potential closed-head, neck, or spinal injury be suspected? Select Yes or No for each victim.

	Yes	No
A woman is lying unconscious on open ground. No other signs of injury are apparent.	<input type="checkbox"/>	<input type="checkbox"/>
There is a conscious victim who is talking with you. His leg is pinned underneath him, and a broken bone is protruding from his thigh.	<input type="checkbox"/>	<input type="checkbox"/>
A victim has two black eyes and a bloody nose.	<input type="checkbox"/>	<input type="checkbox"/>
A child complains of a bad headache and tingling hands.	<input type="checkbox"/>	<input type="checkbox"/>
A woman has capillary refill of more than 2 seconds.	<input type="checkbox"/>	<input type="checkbox"/>

## Knowledge Review: Answer Key



**Instructions: Compare your answer to those shown below.**

1. The main objective with a suspected closed-head, neck, or spinal injury is to:

- ☒ **Prevent further injury by keeping the spine in a straight line.**
- ☐ Determine the extent of the injury.
- ☐ Move the victim as quickly as possible to a treatment area.

The main objective with a suspected closed-head, neck, or spinal injury is to prevent further injury. In-line stabilization is used to protect the victim from further injury.

2. Read the victim descriptions below. Based on the information given, should a potential closed-head, neck, or spinal injury be suspected? Click Yes or No for each victim.

	Yes	No
A woman is lying unconscious on open ground. No other signs of injury are apparent.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
There is a conscious victim who is talking with you. His leg is pinned underneath him, and a broken bone is protruding from his thigh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A victim has two black eyes and a bloody nose.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A child complains of a bad headache and tingling hands.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A woman has capillary refill of more than 2 seconds.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Other signs of possible head, neck, and spinal injuries include:

- Inability to move parts of the body.
- Difficulty breathing or seeing.
- Heavy bleeding, bruising, or deformity of the head or spine.
- Blood or fluid in the ears.
- Bruising behind the ear.
- Uneven pupils.
- Seizures.
- Nausea or vomiting.
- Suspicious mechanism of injury.

### Burns

Burns may be caused by heat, chemicals, electrical current, or radiation. The severity of a burn depends on:

- The temperature of the burning agent.
- How long the victim was exposed.
- Area of the body affected.
- Size of the burned area.
- Depth of the burn.

**Important!** Use extreme caution around burn victims when there is no obvious cause for the burns. If the burns were caused by chemicals or radiation, you may be at risk.

### Recognizing Burn Severity

The skin has three layers: Epidermis, dermis, and subcutaneous layer. Burns may affect one, two, or all three layers of skin.

- **Epidermis:** Outer layer of skin. Contains nerve endings and is penetrated by hairs.
- **Dermis:** Middle layer of skin. Contains blood vessels, oil glands, hair follicles, and sweat glands.
- **Subcutaneous layer:** Innermost layer of skin, also called the hypodermis. Contains blood vessels and fat and overlies the muscle.

### Burn Classifications

Burns are classified into three degrees of severity, depending on the skin layers affected by the burn.

- First-degree burn
- Second-degree burn
- Third-degree burn

Classification	Skin Layer Affected	Symptoms
First-Degree Burns	<ul style="list-style-type: none"> <li>▪ Epidermis (superficial)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reddened, dry skin</li> <li>▪ Pain</li> <li>▪ Possible swelling</li> </ul>
Second-Degree Burns	<ul style="list-style-type: none"> <li>▪ Epidermis</li> <li>▪ Partial destruction of dermis</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reddened, blistered skin</li> <li>▪ Wet appearance</li> <li>▪ Pain</li> <li>▪ Possible swelling</li> </ul>
Third-Degree Burns	<ul style="list-style-type: none"> <li>▪ Complete destruction of epidermis and dermis</li> <li>▪ Possible subcutaneous damage</li> </ul>	<ul style="list-style-type: none"> <li>▪ Whitened, leathery, or charred (brown or black)</li> <li>▪ Painful or relatively painless</li> </ul>

### Treating Burns

The objectives of treatment for burns are to cool the burn area, protect the area, and prevent infection.

#### Burn Treatment: Cooling

The following methods can be used to cool a burn:

- Remove the victim from the burn source and put out flames.
- Remove smoldering clothing unless stuck to the skin.

If skin or clothing is still hot, cool it by immersing it in cool water for not more than 1 minute. Alternately, apply cool compresses wrung out in cool water. You can use soaked towels, sheets, or other cloths for this purpose.

Also, remove heated metal objects like watches and rings.

#### Burn Treatment: Avoiding Hypothermia

Use caution when applying compresses. Cooling a burn too rapidly can cause hypothermia in some victims, especially:

- Infants.
- Young children.
- Older persons.
- Victims with severe burns.

To avoid hypothermia in these victims, do not cool more than 15 percent of the body surface area (the size of one arm) at one time.

#### Burn Treatment: Covering

Cover the burn loosely with sterile dressings to:

- Keep air out.
- Prevent infection.

Local protocols will dictate whether dry or moist dressings should be used.



### Burn Treatment: More Do's and Don'ts

When treating burns:

Do's:	Don'ts:
<ul style="list-style-type: none"> <li>▪ <b>Do</b> elevate burned extremities higher than the heart.</li> <li>▪ <b>Do</b> treat all victims of third-degree burns for shock.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Do not</b> use ice. Ice causes vessel constriction.</li> <li>▪ <b>Do not</b> apply antiseptics, ointments, or other remedies. Such preparations will hold heat in the burn area and will have to be scrubbed off later.</li> <li>▪ <b>Do not</b> remove shreds of tissue or break blisters.</li> <li>▪ <b>Do not</b> remove adhered particles of clothing. Instead, cut the clothing around the burn and leave the burned-in portion in place.</li> </ul>

Knowledge Review



**Instructions: Select the correct answers. When you are finished, turn to the next page to check your answers.**

- Match the burn descriptions on the left with the burn classifications on the right. Insert 1 (First-Degree Burn), 2 (Second-Degree Burn), or 3 (Third-Degree Burn) in the spaces provided.

- ☐ Victim 1: The victim's face is red and blistered, and the eyes are swollen shut. The victim complains of severe pain.
- ☐ Victim 2: The skin on the victim's chest appears brown and charred. The victim does not complain of pain.
- ☐ Victim 3: The victim's arm is red, swollen, and painful when touched. The skin appears shiny and dry.
- ☐ Victim 4: The skin on the victim's legs is whitened and leathery. The pain is intense.

- What treatments should you use on burns? Select Do or Don't for each treatment.

	Do	Don't
Remove the victim from the burn source.	<input type="checkbox"/>	<input type="checkbox"/>
Remove smoldering clothing.	<input type="checkbox"/>	<input type="checkbox"/>
Remove adhered particles of clothing.	<input type="checkbox"/>	<input type="checkbox"/>
Apply pain-relieving ointment to the burn.	<input type="checkbox"/>	<input type="checkbox"/>
Immerse hot skin in cool water for up to 1 minute or apply cool compresses.	<input type="checkbox"/>	<input type="checkbox"/>
Break blisters and remove loose skin shreds.	<input type="checkbox"/>	<input type="checkbox"/>
Apply ice to the burn.	<input type="checkbox"/>	<input type="checkbox"/>
Cool up to 50 percent of the body's surface area at one time.	<input type="checkbox"/>	<input type="checkbox"/>
Cover the burn with sterile dressings.	<input type="checkbox"/>	<input type="checkbox"/>
Elevate burned extremities higher than the heart.	<input type="checkbox"/>	<input type="checkbox"/>
Treat third-degree burn victims for shock.	<input type="checkbox"/>	<input type="checkbox"/>

## Knowledge Review: Answer Key



**Instructions: Compare your answers to those shown below.**

- Match the burn descriptions on the left with the burn classifications on the right. Insert 1 (First-Degree Burn), 2 (Second-Degree Burn), or 3 (Third-Degree Burn) in the spaces provided.

- |          |   |
|----------|---|
| <b>2</b> | Victim 1: The victim's face is red and blistered, and the eyes are swollen shut. The victim complains of severe pain. |
| <b>3</b> | Victim 2: The skin on the victim's chest appears brown and charred. The victim does not complain of pain.             |
| <b>1</b> | Victim 3: The victim's arm is red, swollen, and painful when touched. The skin appears shiny and dry.                 |
| <b>3</b> | Victim 4: The skin on the victim's legs is whitened and leathery. The pain is intense.                                |

- What treatments should you use on burns? Select Do or Don't for each treatment.

	Do	Don't
Remove the victim from the burn source.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Remove smoldering clothing.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Remove adhered particles of clothing.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Apply pain-relieving ointment to the burn.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Immerse hot skin in cool water for up to 1 minute or apply cool compresses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Break blisters and remove loose skin shreds.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Apply ice to the burn.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cool up to 50 percent of the body's surface area at one time.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cover the burn with sterile dressings.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Elevate burned extremities higher than the heart.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Treat third-degree burn victims for shock.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Wounds

Wounds—including lacerations, amputations, and impaled objects—are common after disasters.

The objectives of wound treatment are to:

- Control bleeding.
- Prevent secondary infection.

You have already learned techniques to control bleeding. This section of the lesson focuses on preventing infection by cleaning and bandaging.

### Wound Care: Cleaning

To clean dirt from a wound:

- Irrigate the wound with water.
- Flush the wound with a mild soap-and-water solution.
- Irrigate the wound again with water.

In an emergency situation, a bulb syringe, like a turkey baster, can be used for irrigation.

#### **Never scrub a wound!**

Sterile dressings and bandages are used to keep a wound clean after irrigating and controlling bleeding.

To treat a wound:

- Place a sterile dressing directly over the wound and secure it in place with a bandage.
- If the wound is still bleeding, use a pressure bandage to help control bleeding without interfering with circulation.

### Wound Care Followup

Wound care followup depends on whether there is continued active bleeding.

- **No active bleeding:** If there is no active bleeding, remove the dressing, flush the wound, and check for signs of infection at least every 4 to 6 hours.
- **Active bleeding:** If the dressing is soaked with blood, redress over the existing dressing. Maintain pressure and elevation to control bleeding.

#### Signs of Possible Infection

- Swelling around the wound site
- Discoloration
- Discharge from the wound
- Red striations from the wound site

### Treating Amputations

When treating amputations, the main objectives are to control bleeding, treat for shock, and save tissue parts.

If the severed body part can be located, you should:

- Wrap the severed part in a clean cloth and place it in a plastic bag, if available.
- Keep the severed part cool.
- Keep the severed part with the victim.

### Treating Victims With Impaled Objects

In a disaster, you may encounter victims who have foreign objects lodged in their bodies—usually as the result of flying debris.

The most important thing to remember about treating a victim with an impaled object is **don't try to remove the object**.

#### Treatment for an Impaled Object

- Immobilize the affected body part.
- Don't try to move or remove the foreign object unless it is obstructing the airway.
- Try to control bleeding at the entrance wound without placing undue pressure on the foreign object.
- Clean and dress the wound. Wrap bulky dressings around the object to keep it from moving.

### Knowledge Review



**Instructions: Select the correct answers. When you are finished, turn to the next page to check your answers.**

1. Lacerations should be cleaned by:
  - ☐ Irrigating and scrubbing the wound to remove embedded particles.
  - ☐ Irrigating with water, then soapy water, then water.
  - ☐ Flushing with hydrogen peroxide, then water.
2. After cleaning a wound and controlling bleeding, you should:
  - ☐ Leave the wound to air-dry.
  - ☐ Apply an antibiotic spray, then bandage the wound.
  - ☐ Apply a sterile dressing and clean bandage.
3. If a wound continues to bleed after bandaging, you should:
  - ☐ Redress the wound over the existing bandage and maintain pressure and elevation.
  - ☐ Remove the bandage every 4 to 6 hours to check for infection.
  - ☐ Apply ice to slow the bleeding.
4. A victim has a splintered piece of wood impaled in his thigh. One thing you can do is:
  - ☐ Remove the piece of wood.
  - ☐ Clean around the wood and apply a bulky dressing.
  - ☐ Put pressure on the wood piece to help control bleeding.

### Knowledge Review: Answer Key



**Instructions: Compare your answers to those shown below.**

1. Lacerations should be cleaned by:

- ☐ Irrigating and scrubbing the wound to remove embedded particles.
- ☒ **Irrigating with water, then soapy water, then water.**
- ☐ Flushing with hydrogen peroxide, then water.

Lacerations should be cleaned by irrigating with water, then soapy water, then water.

No other preparations should be used for cleansing, and a wound should never be scrubbed.

2. After cleaning a wound and controlling bleeding, you should:

- ☐ Leave the wound to air-dry.
- ☐ Apply an antibiotic spray, then bandage the wound.
- ☒ **Apply a sterile dressing and clean bandage.**

After cleaning a wound, you should apply a sterile dressing and clean bandage to prevent secondary infection.

3. If a wound continues to bleed after bandaging, you should:

- ☒ **Redress the wound over the existing bandage and maintain pressure and elevation.**
- ☐ Remove the bandage every 4 to 6 hours to check for infection.
- ☐ Apply ice to slow the bleeding.

If a wound continues to bleed after bandaging, you should redress the wound over the existing bandage. You should also maintain pressure and elevation to control the bleeding.

4. A victim has a splintered piece of wood impaled in his thigh. One thing you can do is:

- ☐ Remove the piece of wood.
- ☒ **Clean around the wood and apply a bulky dressing.**
- ☐ Put pressure on the wood piece to help control bleeding.

For a victim with a splintered piece of wood impaled in his thigh, you should clean around the wood and apply a bulky dressing. You should not try to remove an impaled object or put pressure on it.



### Fractures, Dislocations, Sprains, and Strains

In a disaster, victims often sustain injuries to bones, joints, and the muscles and ligaments that surround them.

#### Fracture

- **Closed fracture:** A fracture in which the broken bone does not puncture the skin.
- **Open fracture:** A fracture in which the bone protrudes through the skin. With this type of injury, the wound allows contaminants to enter the fracture site.
- **Displaced fracture:** A fracture in which the bone is no longer aligned. If the limb is angled, there is a displaced fracture.
- **Nondisplaced fracture:** A fracture in which the bone remains aligned. A nondisplaced fracture can be hard to identify. The main signs are pain and swelling.

#### Dislocation

A dislocation is an injury to the ligaments around a joint that is so severe that it permits the bone to separate from its normal position in the joint.

### Sprain

- A sprain involves stretching or tearing of ligaments at a joint. A sprain is usually caused by stretching or extending the joint beyond its normal limits.
- A sprain is considered a partial dislocation. The bone either remains in place or falls back into place after the injury.

### Strain

A strain involves stretching and/or tearing of muscles or tendons. Strains most often involve the muscles in the neck, back, thigh, or calf.

### General Treatment

Use the following techniques when treating fractures, dislocations, sprains, and strains:

- Remove restrictive clothing, shoes, and jewelry that could act as tourniquets during swelling.
- Immobilize the injury and the joints immediately above and below the injury. We'll discuss splinting—the most common method of immobilizing an injury—a little later in the lesson.

If you're not sure of the type of injury, treat it as a fracture.

### Treating Open Fractures

Open fractures are high-priority injuries because of the risk of severe bleeding and infection. Treat them quickly and check them frequently.

Below are important do's and don'ts for treating open fractures.

Do's:	Don'ts:
<ul style="list-style-type: none"><li>▪ <b>Do</b> cover the wound with a sterile dressing.</li><li>▪ <b>Do</b> splint the fracture without disturbing the wound.</li><li>▪ <b>Do</b> place a moist dressing over the bone end to keep it from drying out.</li></ul>	<ul style="list-style-type: none"><li>▪ <b>Don't</b> draw the exposed bone ends back into the tissue.</li><li>▪ <b>Don't</b> irrigate the wound</li></ul>

### Treating Dislocations, Sprains, and Strains

Dislocations, sprains, and strains can be difficult to identify. The signs are often similar to those of a fracture. Symptoms may include:

- Tenderness at the site of the injury.
- Swelling and/or bruising.
- Restricted use or loss of use.

Treat these injuries as fractures by immobilizing the injury. Don't try to relocate a suspected dislocation!

### Splinting

Splinting is used to immobilize an injured limb. Follow these basic guidelines for splinting:

1. Support the injured area above and below the site of the injury.
2. If possible, splint the injury in the position that you find it.
3. Don't try to realign bones.
4. Immobilize above and below the injury.
5. After splinting, check for proper circulation (color, warmth, and sensation).

CERT classroom training will provide instruction and practice in splinting.

### Splint Materials

A variety of materials can be used for splinting, including:

- **Rigid materials:** Cardboard, board, metal strip, folded magazine or newspaper, or other items.
- **Soft materials:** Towels, blankets, pillows, or other soft items.
- **Anatomical splint:** An adjacent unfractured bone such as the adjacent finger or leg.

### Attaching a Splint

When applying a splint:

- Use soft materials to fill the gap between the splinting material and the body part.
- Tie the splinting material in place with bandaging materials or soft cloths.

Let's look at a few splinting examples. Remember—don't try these methods until you have had classroom training!

### Splinting Example: Rigid Material

**Cardboard splint:** The edges of the cardboard are turned up to form a "mold" in which the injured limb can rest.

### Splinting Example: Soft Material

**Towel splint:** A towel is rolled up and wrapped around the limb, then tied in place.

**Pillow splint:** A pillow is wrapped around the limb and tied.

### Splinting Example: Anatomical Splint

**Anatomical splint:** A fractured leg is immobilized by tying it at intervals to the unfractured leg. A blanket may be placed between the legs for padding.

### Knowledge Review



**Instructions: Select the correct answers. When you are finished, turn to the next page to check your answers.**

1. Which of the following injuries should receive the highest priority?
  - ☐ Open fracture
  - ☐ Closed fracture
  - ☐ Dislocation
  - ☐ Nondisplaced fracture
2. When treating an open fracture, which of the following treatments should be used? Select ALL valid treatments.
  - ☐ Place a moist bandage over the bone end.
  - ☐ Realign the bone ends, then apply a splint.
  - ☐ Cover the wound with a sterile dressing.
  - ☐ Irrigate the wound with soapy water.
  - ☐ Splint the fracture without disturbing the wound.
  - ☐ Draw the exposed bone ends back into the tissue.
3. Which of the following treatments are recommended when splinting a fracture, dislocation, or sprain? Select ALL recommended treatments.
  - ☐ Support the injured area above and below the site of the injury.
  - ☐ Straighten the limb into a position that can be conveniently splinted.
  - ☐ Immobilize above and below the injury.
  - ☐ Secure the splinting material at the site of the injury.
  - ☐ Use available rigid and/or soft materials for the splint.
  - ☐ After splinting, check for proper circulation.

### Knowledge Review: Answer Key



**Instructions: Compare your answers to those shown below.**

1. Which of the following injuries should receive the highest priority?

- ☒ **Open fracture**
- ☐ Closed fracture
- ☐ Dislocation
- ☐ Nondisplaced fracture

An open fracture should receive the highest priority because of the risk of severe bleeding, and because contaminants can enter the fracture site through the open wound.

2. When treating an open fracture, which of the following treatments should be used? Select ALL valid treatments.

- ☒ **Place a moist bandage over the bone end.**
- ☐ Realign the bone ends, then apply a splint.
- ☒ **Cover the wound with a sterile dressing.**
- ☐ Irrigate the wound with soapy water.
- ☒ **Splint the fracture without disturbing the wound.**
- ☐ Draw the exposed bone ends back into the tissue.

3. Which of the following treatments are recommended when splinting a fracture, dislocation, or sprain? Select ALL recommended treatments.

- ☒ **Support the injured area above and below the site of the injury.**
- ☐ Straighten the limb into a position that can be conveniently splinted.
- ☒ **Immobilize above and below the injury.**
- ☐ Secure the splinting material at the site of the injury.
- ☒ **Use available rigid and/or soft materials for the splint.**
- ☒ **After splinting, check for proper circulation.**

**Hypothermia**

Hypothermia occurs when the body's temperature drops below normal. Hypothermia may be caused by:

- Exposure to cold air or water.
- Inadequate food combined with inadequate clothing and heat—especially in older people.
- Hypothermia can occur in a matter of minutes.

**Symptoms of Hypothermia****Primary signs and symptoms:**

- Body temperature of 95°F (37°C) or less
- Redness or blueness of the skin
- Numbness accompanied by shivering

**Secondary signs and symptoms:**

- Slurred speech
- Unpredictable behavior
- Listlessness

**Treating Hypothermia**

Treat victims who are at risk for hypothermia by warming and protecting them:

- Remove wet clothing and wrap the victim in a blanket or sleeping bag that covers the head and neck.
- Protect victims from the weather. Don't let them walk around, even if they seem fully recovered.
- Provide warm, sweet drinks and food if the victim is conscious and coherent. Do not offer alcohol or massage.
- Place an unconscious victim in the recovery position (lying on his or her side with knees drawn up).



## Knowledge Review: Answer Key



**Instructions: Select the correct answers. When you are finished, turn to the next page to check your answers.**

1. Are the following treatments appropriate for a victim with hypothermia? Select Yes or No.

	Yes	No
Remove wet clothing.	<input type="checkbox"/>	<input type="checkbox"/>
Massage extremities to increase blood flow.	<input type="checkbox"/>	<input type="checkbox"/>
Wrap the victim in a warm blanket.	<input type="checkbox"/>	<input type="checkbox"/>
Encourage them to walk around to speed circulation.	<input type="checkbox"/>	<input type="checkbox"/>
Give them cocoa and cookies if conscious and coherent.	<input type="checkbox"/>	<input type="checkbox"/>
Offer them warmed whiskey.	<input type="checkbox"/>	<input type="checkbox"/>
Leave wet clothing in place under a warm blanket.	<input type="checkbox"/>	<input type="checkbox"/>
Put the victim in a place that is sheltered from the wind.	<input type="checkbox"/>	<input type="checkbox"/>

## Knowledge Review



**Instructions: Compare your answers to those shown below.**

1. Which of the following treatments are appropriate for a victim with hypothermia? Select Yes or No.

	Yes	No
Remove wet clothing.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Massage extremities to increase blood flow.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wrap the victim in a warm blanket.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Encourage them to walk around to speed circulation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Give them cocoa and cookies if conscious and coherent.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Offer them warmed whiskey.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Leave wet clothing in place under a warm blanket.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Put the victim in a place that is sheltered from the wind.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The following treatments are appropriate for a victim with hypothermia:

- Remove wet clothing.
- Wrap the victim in a warm blanket.
- Give them cocoa and cookies.
- Put the victim in a place that is sheltered from the wind.
- You should NOT massage extremities, let them walk around (even if they seem recovered), or offer alcohol.

### Lesson Summary

In this lesson, you learned that:

- After all victims have been triaged, assess each victim from head to toe. Complete the assessment before beginning treatment.
- For suspected head, neck, and spinal injuries, use inline stabilization to keep the spine in a straight line.
- Treat burns by cooling and covering.
- Treat wounds by controlling bleeding, cleaning, and bandaging.
- Treat fractures, dislocations, sprains, and strains by immobilizing—usually splinting.
- Treat hypothermia by warming and protecting.

### Next Lesson

You have completed this lesson. You are now ready to begin Lesson 16: Disaster Psychology.